PREVAC ENGINEERS SPECIFICATIONS

(Available in Microsoft Word upon request)

1.0 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract apply to this section.

B. Section applies to low-pressure Centrifugal Chillers using R-1233zd(e) refrigerant.

1.2 PREVENTION OF VACUUM AND SAFE LEAK TESTING SYSTEM

A. System shall maintain automatically a 0.00 psig pressure within the chiller vessel during non-operational periods.

B. System shall reference atmospheric pressure and compare such to the internal Chiller pressure continuously.

C. Controller for system shall provide precision proportional power control to a heat source in order to maintain the set point pressure to +/- .01-psi accuracy.

D. System shall have a high refrigerant pressure warning if chiller refrigerant pressure reaches 10 psig with visual, audible, and remote monitoring alarms.

E. System shall have an independent shut down of the prevention of vacuum system when the chiller refrigerant pressure reaches 10 psig.

F. System shall raise and maintain refrigerant pressure in the chiller vessel(s) by circulating heated water.

G. Pressure rating shall be 350-psi for all water loop components.

H. Boiler shall be a stainless steel vessel.

I. 67,000 BTU / 5.6Ton peak water heating capacity shall be provided.

J. System shall control and limit water temperature to 110^{o}F.

K. System shall have a separate high water temperature shut down of 125^{o}F.

L. Controller shall have pressure readout to the 1/100 of a psi.

M. Controller shall have a varied pressure setting from 0.00 to 6.00 psig for chiller servicing.

N. Controller shall be able to display pressure set point.

O. Controller shall be capable of being electrically interlocked with the chiller controls such that it is activated during shutdown periods and deactivated during operational periods of the chiller.

P. System shall use a stainless steel welded bellows pressure transducer.

Q. System shall use a 10 psig pressure switch compatible with refrigerants.

R. System shall use timing circuit to remove power from heaters and pump if system pressure of 0.00 psig is not reached within a four hour time period and provide an indicator light of status.

S. System shall remove power from heaters and pump if system pressure is 1/100 of a psi above controller's pressure set point and the heaters remain on. It shall provide an indicator light of status.

1.3 COMPONENTS

1.3.1 Refrigerant pressure controller

A. Four-digit pressure display in tenths and hundreds in psig.

B. Pressure seal mode shall be designed to maintain set point of 0.00 psig when chiller is off.

C. Leak test mode set points 0.00 to 6.00 psig for servicing.
D. Proportional power control to maintain set point to within 1/100 of a psi.
E. LED's indicating status of safety shut downs.
F. 520 volt maximum voltage
G. Surge rated 10,000 volt 8x50 us, 6,000 amps.
H. Automatic Shut down if Pressure or Temperature wires cut.
I. Signal Inputs
  i Pressure Sensor, 2 wires
  ii Temperature Sensor, 1 wire & ground
  iii Temperature Switch, 1wire & ground
  iv Remote disable Switch, 2 wire dry contact.

1.3.2 Stainless steel heating vessel.
A. Temperature control sensor.
B. Temperature safety switch.
C. Replaceable heating elements
D. 30-gpm Re-circulating pump.
E. 350 psig rated all components

1.3.3 High Pressure Alarm / Shut Down
A. Circuit breaker with 3 trip modes.
B. 30 amp current trip.
C. 10 PSIG Pressure trip.
D. Broken wire on the pressure switch trip.
E. Audible, visual, and remote alarm capability.

1.3.4 Stainless steel gauge type pressure transducer.
A. Maximum pressure 50 PSIG.
B. Refrigerant compatible, welded stainless steel diaphragm.
C. Vacuum Rated at 28 inches.

1.3.5 Pressure switch
A. 10-psig compatible with refrigerant.
B. 1/8 inch male NPT fitting.
C. Vacuum Rated at 28 inches.
D. Maximum pressure 50 psig.

1.3.6 Current Limiting Fuse Assembly
A. 200,000 Amp Interrupt Rating
B. 35 Amp Fuse Rating
C. 6,000 Amp Peak let through current
D. 600 volt continuous rated.

1.3.7 Strainer
A. ¾" NPT female.
B. 350 Psig
C. Removable Screen.

2.0 PRODUCTS

2.1 GENERAL

2.1.1 A Prevention of vacuum and safe leak testing system shall be a PREVAC system or approved equivalent.

2.1.2 All products must be listed by an approved agency such as Underwriters Laboratories, U.L., or Intertec Testing Labs, ETL, and Canadian Standards, CSA. Proof of such listing is to be provided on demand.

3.0 EXECUTION

3.1 APPLICATION

A. Manufacturer shall supply and install a permanently attached refrigerant emission abatement system for the specified chillers, and

B. Provide a means for prevention of air/moisture infiltration and refrigerant loss on idle chillers, and

C. Provide a safe means to pressurize a chiller for leak testing, and

D. Provide the means to maintain 0.00 psig for minor repairs, and

E. Provide an independent high refrigerant pressure alarm and disconnect.

End of Section